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**MULTIPLE USE  
MANAGEMENT PLAN  
for  
NATIONAL RESOURCE LANDS  
SAN RAFAEL SWELL**

U.S. DEPARTMENT OF THE INTERIOR  
Bureau of Land Management  
Price, Utah District

June, 1973



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"There is as yet no ethic dealing with man's relation to land and to the animals and plants which grow upon it. Land, like Odysseus' slave girls, is still property. The land-relation is still strictly economic, entailing privileges but not obligations.

"The 'key-log' which must be moved to release the evolutionary process for an ethic is simply this: quit thinking about decent land use as solely an economic problem. Examine each question in terms of what is ethically and aesthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

— *Aldo Leopold*

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PLANNING FOR THE FUTURE - THE SAN RAFAEL SWELL

This brochure describes management actions proposed by the Price District Manager, Bureau of Land Management, for a 630,000 acre area in southeastern Utah known as the San Rafael Swell. The report is based on years of inventory, study, analysis, and public input obtained through the Bureau's land use planning system.

It describes actions being proposed to protect, manage, and develop the corridor and lands adjacent to Interstate Highway 70, over which about 800,000 travelers passed in 1971. It recognizes both national and local needs and uses.

The proposal indicates that the Bureau of Land Management needs the authority and mandate to effectively implement the action program recommended by the district. One suggestion that has been made is to provide the area with National Conservation Area status, as has been done for the King Range Area in California. The Department of the Interior has taken no position on this idea. It has recommended the enactment of the proposed National Resource Lands Management Act of 1973 which would grant all needed authority for management actions in the San Rafael Swell area to accomplish the proposed program. This proposal has been introduced as S 1041 and HR 5441.

We would appreciate your review of the proposed management program for the San Rafael Swell and would welcome your comments.

Sincerely yours,



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*Paul L. Howard*  
Paul L. Howard  
State Director, Utah

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# Preface

The San Rafael Swell is a highly scenic, rugged geologic upthrust located in Emery County in East Central Utah. Until recently, its visitors included only graziers, miners, and a few hardy recreationists.

In November of 1970, the first two lanes of Interstate Highway 70 were opened through the Swell. The traveling public made it quickly apparent that the area's most valuable and most fragile resource was its scenery. To stabilize Emery County's population and economy, continued development of certain of the area's resources should be encouraged. Conflicts between the need for preserving aesthetic qualities for millions of travelers and the need for economic development demands a comprehensive use plan for the area affected by I-70 access.

The Bureau of Land Management's Price District, as the principal land holder (90 percent of the total land area), has prepared the proposed land use plan summarized in this document. State and local government officials and interested citizens were contacted in gathering information used in this plan. Before any proposals are implemented, there will be full, public review and complete compliance with the National Environmental Policy Act. Cooperation between all levels of government and the public is necessary for a successful action program.

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## **FRONT COVER PHOTO**

*At the eastern edge of the San Rafael Swell,  
Interstate Highway 70 winds through  
Spotted Wolf Canyon in San Rafael Reef.*



*Patches of pinyon-juniper make an attractive pattern in the grasslands of Link Flats.*





# Introduction

Some 65 million years ago, during the Laramide era of the Cretaceous period, an upheaval occurred which created a kidney-shaped anticline 50 miles long and 30 miles wide. This anticline is now known as the San Rafael Swell. The long axis of the Swell is oriented in a northeast-southwest direction with the center located some 35 miles southwest of Green River, Utah.

As one travels from east to west through the Swell, a dramatic picture in three major phases of nature unfolds. The first phase consists of the upturned rock formations of the San Rafael Reef. The traveler next enters Sagebrush Bench and the Head of Sinbad areas where placid pinyon-juniper flats and scattered grassy parks create an impression of peace. The final phase displays a dramatic weathering process, creating isolated buttes, mesas, deep canyons, and sparsely vegetated areas along the southern and western portions of the San Rafael Swell.

The San Rafael Swell has been affected by relatively few of the effects of man's activities. However, it does contain alternating effects of nature's chaos and tranquility and includes a large and varied area of primitive, almost pristine, landscape.

The recent opening of Interstate Highway 70 and resultant influx of travelers into this otherwise relatively inaccessible area, has created new and increasing impacts on the land resources and, conversely, impacts of resource management activities on the travelers. Recognition of these problems led to realization by Bureau of Land Management professionals that a comprehensive land use plan was needed to minimize or resolve the potential conflicts among resources, uses and users. The com-

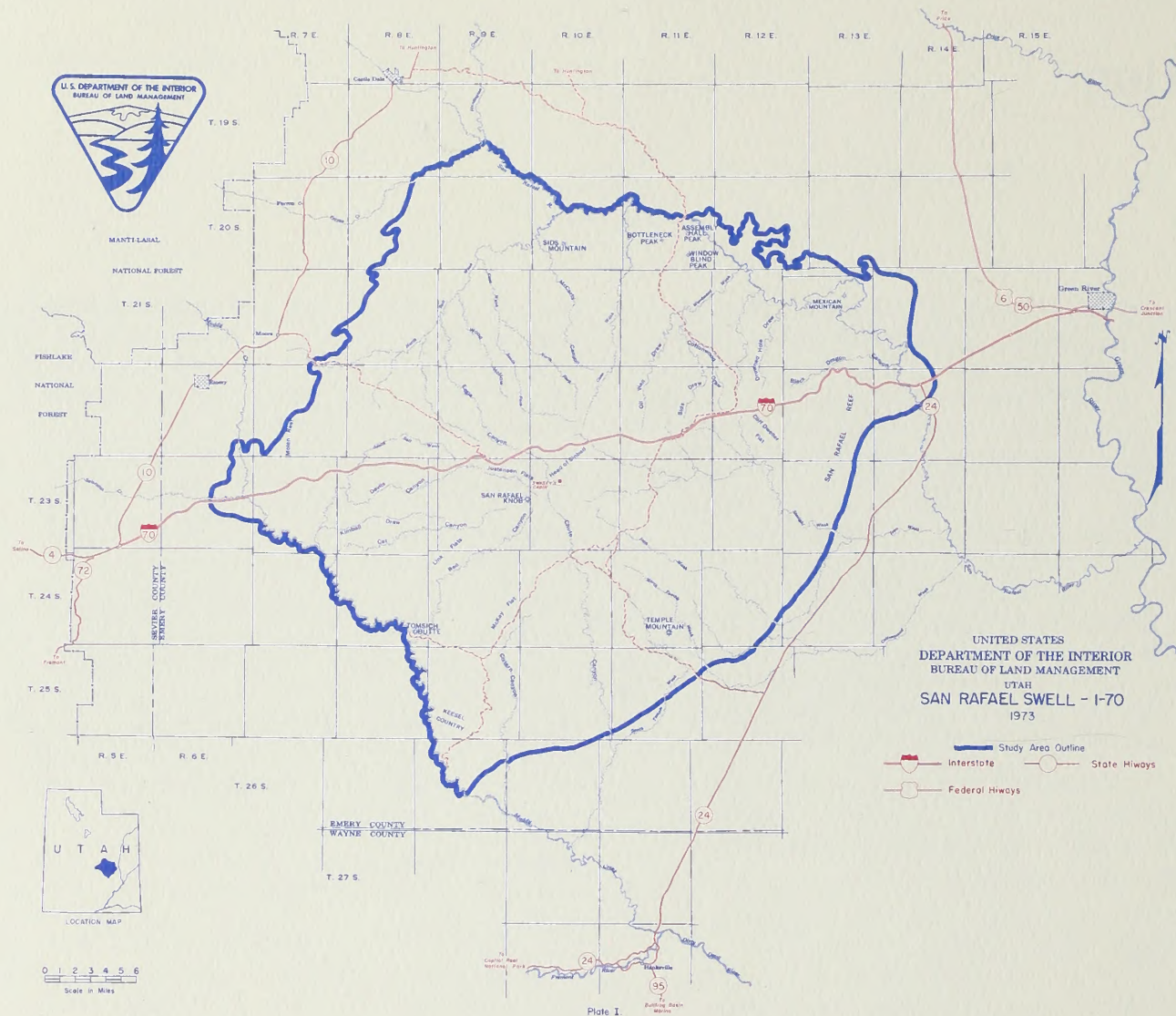
pounding impact of the ever-increasing recreation use in the form of campers, hikers, "pot-hunters," and off-road vehicles, superimposed on resource exploitation in the form of mining, mineral leasing, and grazing, is of particular concern to the Bureau of Land Management.

A study of the San Rafael Swell area was initiated by BLM in 1972 to develop a long range plan for the management of all resources in the area impacted or influenced by travelers and recreationists using I-70 as an access route.

The study area was divided into three zones for which specific actions are planned. These are the general use zone, visual corridor and service zone, and primitive zone. The general use zone includes the portion of the Swell affected by I-70 users. The visual corridor and service zone is the area within the general use zone visible to or used by travelers on I-70, and the primitive zone includes four roadless and scenic areas that appear to have primitive area value.

Many of the proposed actions will require action by agencies and organizations other than the Bureau of Land Management. Proposed designations of a national conservation area, primitive, and recreation lands will require Secretarial or Congressional action. Management decisions regarding realignment of I-70, plans for interchanges, and locations of sand and gravel pits will require cooperation with the Utah Department of Highways. Other proposed actions such as rejection of the State selection of land at Moore Interchange, proposed withdrawals, and powerline corridors will probably be extremely controversial.





Map of I-70 and San Rafael BLM Study Area



# Socio-Economic Situation

The Swell lies mainly in Emery County, Utah. The entire county's small (5,100) rural population relies principally on agriculture and mining for its economic base. The decline in numbers of workers needed for these industries has caused a general out-migration over the past two decades. The 1970 Utah Census of Population states that the incomes of 14 percent of the residents is below the poverty level.

Tourism and development of power are the area's primary opportunities for reversing the population drain. As a measure of the tourism potential, over three quarters of a million people traveled I-70 primarily during the "tourist" months in 1971. Though many residents realize the economic advantage of developing tourism, some have been reluctant to encourage the intrusion on their daily lives that is associated with transient recreationists. They love their country and tend to want to preserve its beauties for their personal well being.

These factors make imperative a program of orderly development of recreation use, and environmental protection in the San Rafael Swell, Emery County's most aesthetic land area.



*As it courses through the San Rafael Swell, the San Rafael River carves primitive Black Box Canyon*







# The Lands and Resources

## Land Status

The national resource lands (NRL) administered by BLM within the study area have all been classified for retention in Federal ownership for multiple use under the Classification and Multiple Use Act. They were also segregated from entry under the agricultural and homestead laws.

The San Rafael recreation site was withdrawn from entry under the 1872 mining laws. Other lands within the study area include about 80,000 acres of state and 1200 acres of private lands. The private land is along Ferron Creek, San Rafael River, Muddy River, and on Sid's Mountain.

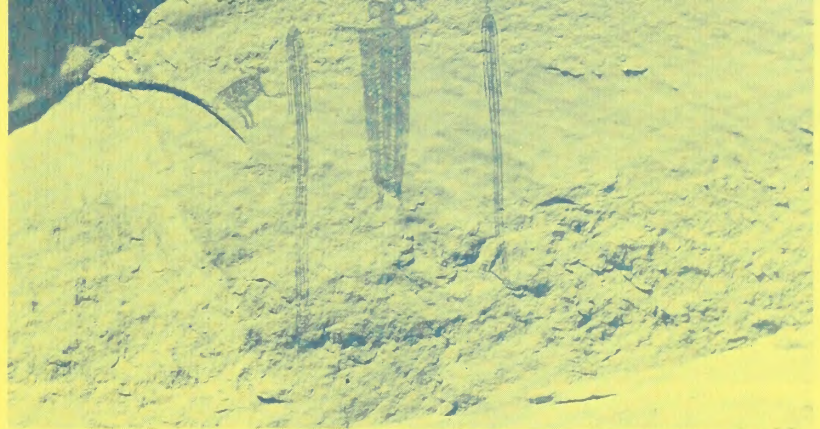
With minor exceptions the state lands are the four sections (2, 16, 32, 36) in each township, given to the state by the Enabling Act of 1896 which established the State of Utah. The state has filed an application for 535 acres adjacent to the proposed Moore Interchange.

### I-70 Study Area

Acreage (1000's)

	NRL	State
General Use Zone	320	50
Visual Corridor & Service Zone	90	10
Primitive Areas	140	20
Subtotal	550	80
Total State and NRL	630*	

*\*In addition, about 1200 acres of private land lie within the study area.*



*The east panel of pictographs in the Head of Sinbad is the best preserved ancient Indian rock art found in the area.*

## Antiquities

The study area contains a variety of archaeological, historical, and paleontological features. These features are valuable for scientific, educational, and recreational purposes. A complete survey or inventory of these features has never been conducted.

The archaeological values are the most significant of the antiquities features. Evidence of occupation by the Desert Archaic Culture in the area was discovered during the excavation of a cave on a tributary of Salt Wash during the summer of 1970. A projectile point of a type estimated to be 6,000 years old was found just west of the study site in the fall of 1972. A variety of petroglyph and pictograph sites are located in the study area.

The Morrison Formation, which contains fossil remains in other areas, is exposed along the western edge of the study area. However, extensive fossil deposits are not known to exist in the study area. Petrified wood has been found in limited amounts near the head of Eagle Canyon.

Historical sites are primarily of local significance and are associated with the early livestock and mining operations. The Swasey Cabin is listed on the State Register of Historical Sites.



## Recreation

The San Rafael Swell's exceptional variety of colorful canyons, spectacular monoliths (massive stone blocks), arches, cliffs, buttes and mesas intermingled with placid grassy parks and woodlands created scenery of equal or superior quality to na-

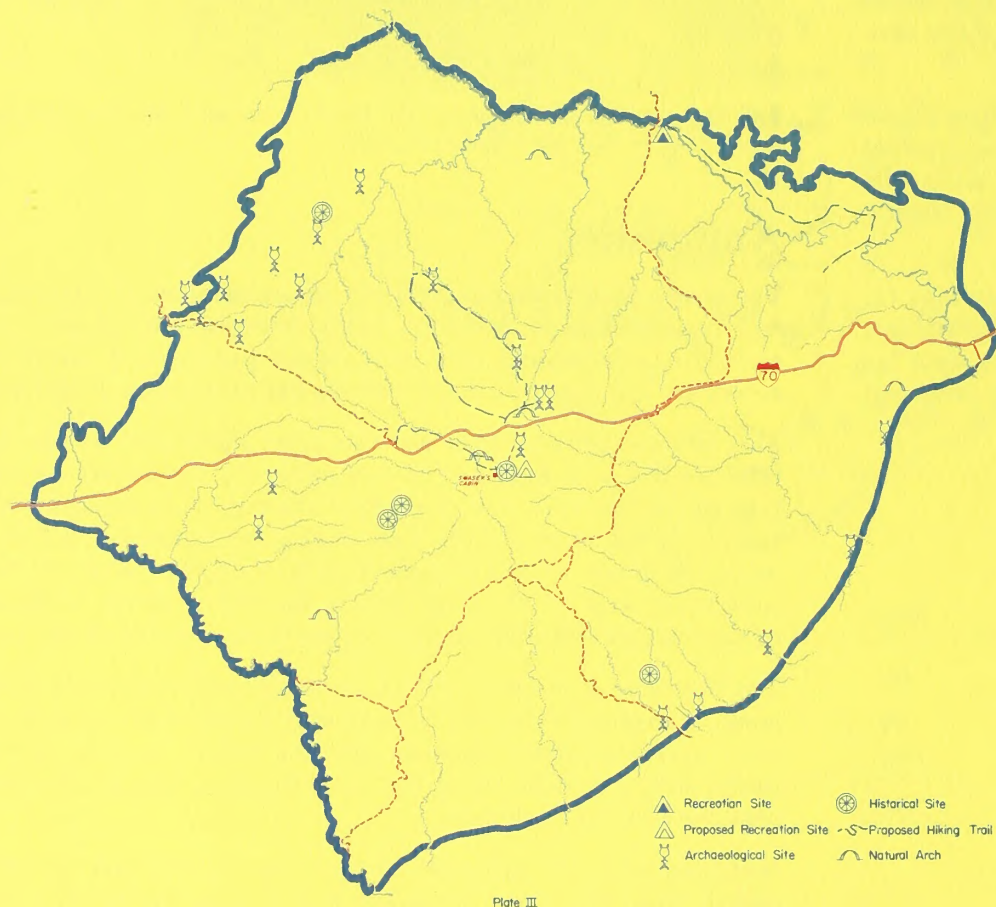
tional parks lying to the south. Its value lies in its variety — not in single unique features. The views range from pastoral, to interesting, to breathtaking. The quiet remoteness and lack of development is disturbing to some and pleasant to others. The moods of nearly all who visit the area are affected in some way.

In addition to the outstanding natural areas, significant archaeological and historical features attract one's interest.

Prior to construction of I-70, the area received relatively little recreation use. It was visited by people who enjoyed an intimacy with the desert environment. They spent many leisure hours camping, riding, rock-hounding, photographing and generally exploring this remote country.

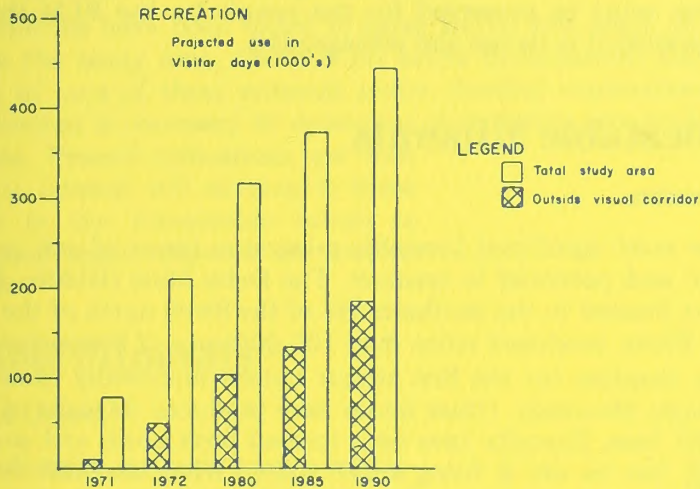
The influx of travelers on I-70 has created people management problems. Some people are camping along the right-of-way, cutting the fences, indiscriminately using the country with off-road vehicles, littering and causing general safety hazards and sanitation problems that are deteriorating aesthetic and environmental values. Traveler convenience and safety must be considered. These people presently must travel 106 miles from Green River to Salina without any automotive, restaurant or overnight services. No developed campsites exist along this part of I-70 for traveler or visitor convenience. Projections indicate that the environment will deteriorate severely without planned development and use supervision.

There were approximately 80,000 visitor days of recreation use in the San Rafael Swell in 1971. A visitor day is a visit by



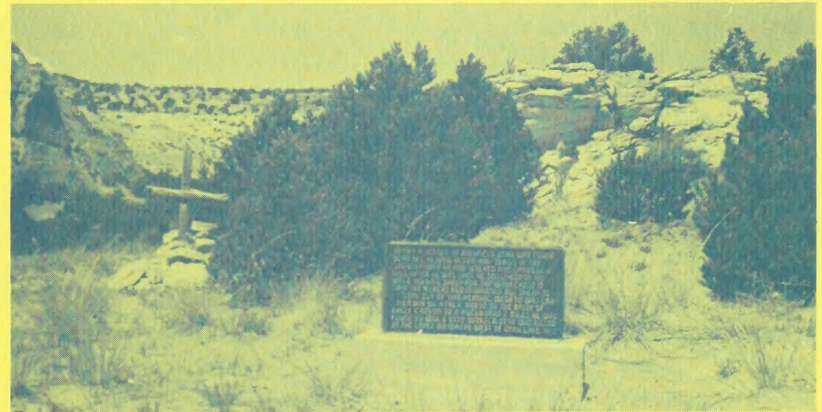
Identified Archaeology Sites and Historical Swasey's Cabin.





one person for 12 hours. Most of this use occurs during April, May and June each year. It increased 51 percent to approximately 121,000 visitor days in 1972. This compares significantly to only 21 percent increase in recreation use throughout the BLM Price District during the same period. Figure 1 illustrates the projected visitor use in the San Rafael Swell through 1990.

Opening I-70 brought to the area people who are either making a scenic view trip across the Swell, or casual interstate travelers who may pass this way only once. Their visits have little impact on the area outside of the highway right-of-way. Utah State University studies show that approximately 540,000 individuals stopped at the overlooks and rest areas out of an estimated 783,900 total travelers who passed this way in 1971. This highway is being used more like a scenic parkway than a high speed freeway. The posted speed limit through the central portion of the Swell is 70 M.P.H., but speed checks indicate that the average speed traveled is 55 to 60 M.P.H. Traffic in 1972 was 40 percent higher than 1971. Conservative estimates indicate that an average of more than 2,500 cars per day will be traveling I-70 by 1990.



*Swasey's Cabin is listed on the Utah State Register of Historical Sites. The grave of Shepherd Henry M. Jensen is near Copper Globe. Hiking and backpacking is one form of recreation in the area.*



Because of the importance of the scenic quality to sightseers, there is a definite need to protect the aesthetics in the 100,000 acre I-70 visual corridor. Areas that are highly susceptible to deterioration include the San Rafael Reef, Head of Sinbad area, the flats between Ghost Rock and Devil's Canyon overlook and the Sand Bench area.

There are approximately 122,000 acres north of I-70 in the Coal Wash-Sid's Mountain area and around Mexican Mountain that have primitive, natural scenic values. There are about 36,000 acres south of I-70 in the Cat Canyon-Hebe Canyon area and Keesle Country that also have primitive potential. The San Rafael and Muddy Rivers through portions of the study area appear to meet the criteria for inclusion in the wild and scenic rivers system.

## Aesthetics

The San Rafael Swell's greatest natural resource is its aesthetic quality. Nature has applied space, color, texture, and symmetry with unparalleled variety in this unique bulge in the earth. To this is added cool, clean air scented by pine and juniper, unpolluted soils and streets, solitude, peace, surprise, exultation, and well-being.

Travel through the Swell to many persons is an emotional experience. Follow a tourist along I-70. Watch him slow perceptibly as he enters the Swell. Watch fingers point. Watch him suddenly stop along the road, and see necks crane. Ask the traveler what he thinks of the area and invariably he will answer "beautiful" or "spectacular" or "very nice." But look into his eyes — the eyes of the young, the old, the vacationer, the travel weary. The eyes all radiate a gleam, a look of wonder, a glow of life, and you know his surroundings have touched his inner self.

The Swell's aesthetic quality is the resource that will affect the greatest number of people. Millions will travel through the Swell on I-70. Many will stop and stay to explore it, to enjoy it. This

value must be preserved for the people by the BLM through stewardship in its use and management.

## Locatable Minerals

### Uranium

The most significant locatable mineral in terms of past production and potential is uranium. The Delta Mine (Hidden Splendor) located in the southern end of the Swell north of the Muddy River, produced more than 100,000 tons of 0.4 percent ore. The uranium for the first atomic bombs supposedly came from Temple Mountain. Other mines have produced deposits of up to 1000 tons. Deposits have been located both north and south of I-70, but no ore is being mined today. When uranium becomes more important as an energy source, these deposits may become economically workable, probably sometime after 1982.

### Gypsum

Large deposits of gypsum extend throughout the western portion of the study area. There has been no mining of these deposits to date. When compared with more suitable gypsum deposits, these in the study area are too remotely situated with respect to market areas to be economically attractive. They probably will not be developed for at least 50 years.

### Silica Sand

A large deposit of silica sand occurs in association with limestone in the eastern portion of the Swell. The sand is suitable for optical glass manufacturing as it is of extremely high quality. The limestone also can be used in the manufacturing process. The locator, I.I.R., Inc., recently stated that due to a lack of natural gas at Green River, Utah, for glass manufacturing, and for other reasons it is doubtful that they will develop the deposit in the foreseeable future.



### Copper, Strontium, Barite, Manganese, Sulphur

These minerals have been found in small and/or low grade deposits in the study area. There is no active development and shipping of ores of these minerals today. Further exploration and evaluation is necessary to determine their future economic potentials. Present indications are that very little interest will develop in these minerals in the foreseeable future as much more viable deposits are known elsewhere.

## Saleable Minerals

### Sand and Gravel

Sand and gravel deposits have been developed only for use in construction of I-70. This will continue until the highway is complete, but no further development appears economically feasible because of the remoteness of the area.

### Building Stone

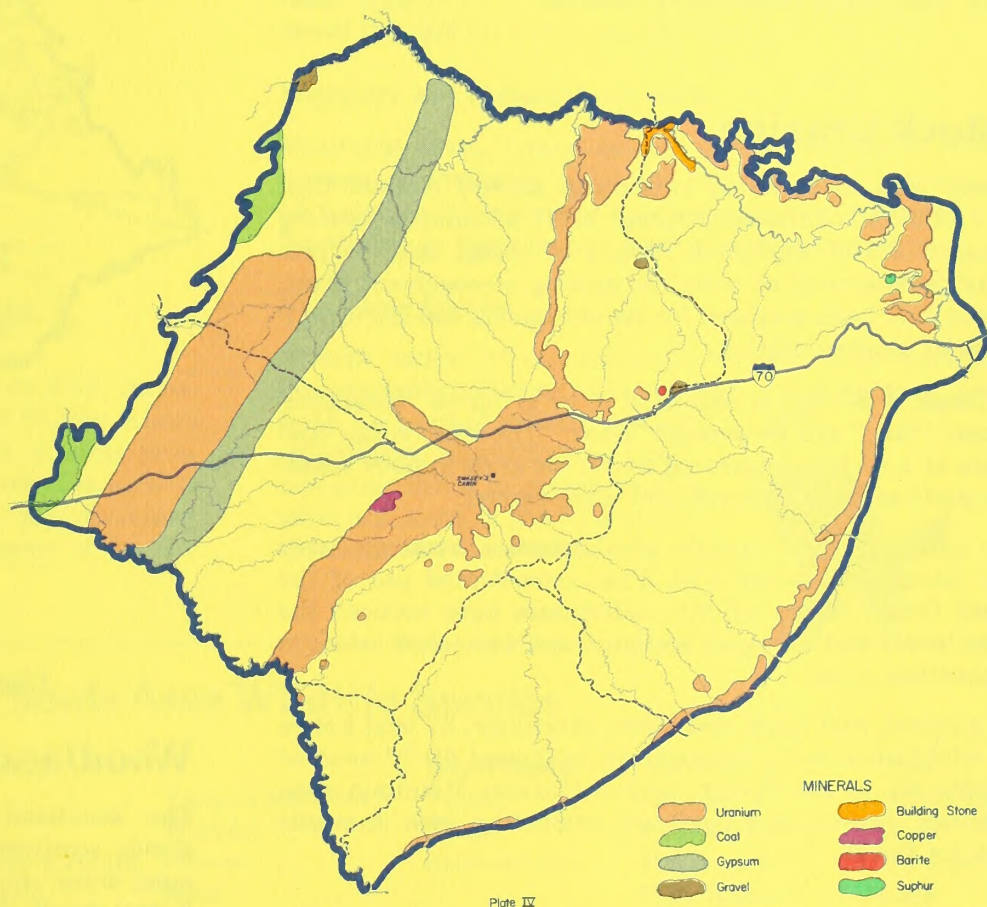
Sandstone building stone is found in plentiful deposits in the Moenkopi formation throughout the area. It has been mined sporadically, but is not expected to be economically important as deposits of equal or better quality are located closer to market areas.

## Leasable Minerals

### Oil and Gas

The study area possesses the primary criteria necessary for accumulations of

oil and/or gas: suitable structure, suitable source and reservoir rock, and a stratigraphic thickness of 1000 feet. About 14,000 acres are under lease with additional acreage in recent offers to lease. Twenty holes have been drilled to date with negative results, but continued interest is expected for the near future.



Indicated Mineral Deposits



## Coal

There are no leases or prospecting permits in the area. Though thin lenses of coal up to two feet in thickness are known to exist in the western portion of the area, they are of no commercial interest. Commercially important coal deposits lie immediately west, just outside the study area.

## Livestock Grazing

The study area is currently producing 22,400 Animal Unit Months (AUM's)\* of livestock forage in 31 allotments used by 76 licensees; 8,700 additional AUM's of forage may be produced by development of scientific grazing management plans. Such plans have been prepared for six allotments and are in various stages of implementation.

Of the range, 8 percent is estimated to be in "good" condition, 44 percent "fair," and 48 percent "poor." The areas in fair condition are in a slightly improving trend; the areas in poor condition are static as far as improvement is concerned.

Specific problem areas include administrative livestock trails and the underpasses along I-70. The concentrated use of the trails and funnel effect of the underpasses have reduced the vegetative cover and damaged aesthetic and watershed values in their immediate areas.

During a recent wild horse and burro inventory, 27 wild horses and 47 wild burros were counted. An estimated 60-70 head of feral goats are in the Spring Canyon-Mexican Mountain area. These horses, burros, and goats are competing with domestic livestock for forage.

\*An AUM is the amount of forage eaten by one cow in one month.



Livestock Grazing Allotment Boundaries

## Woodlands

The woodland resource consists of even-aged pinyon-juniper stands scattered throughout the study area. The largest and most dense stands are located in the central portion of the San Rafael Swell. Tree numbers average 300 per acre. Volumes are estimated to be 500 cubic feet or approximately eight cords per acre, 60 percent of which is pinyon. These stands are producing



very little annual increase in volume. No formal inventory has been conducted.

The woodland has limited value for posts because of generally poor tree forms. Demand for wood products from the study area is low. Less than \$500 worth of cordwood was sold from the area in the last three years.

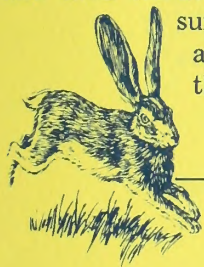
## Wildlife

The wildlife species constitute an important and attractive part of the natural environment of the area.



### Mule Deer

The only big game species in the area is the mule deer. Its habitat is primarily limited to the San Rafael and Muddy Rivers and their tributaries. Before the opening of I-70, hunting pressure was light and trophy bucks were taken. I-70 access increased hunting pressure and decreased the number of trophies taken. Because of the low



productivity of the desert habitat, hunting pressure must be carefully controlled to sustain the herd.

### Desert Bighorn Sheep

The desert bighorn sheep once inhabited the area and there have been reports of a remnant population. Little else is known about this species and its habitat here.

### Migratory and Upland Game Birds

Mourning doves, waterfowl and chukars are found in the area. Because of limited populations they have not been nor are they expected to be important hunting resources. They are, however, interesting to travelers and general recreation visitors.

### Non-Game Species

A large variety of non-game species exist here. Included is the rare peregrine falcon together with other raptors, predators, small fur-bearing animals, reptiles, amphibians, songbirds, and small non-game fish. The accompanying table lists some of the 84 known species found in the area.



## I-70 Study Area Wildlife Species

Raptors	Predators	Furbearers	Various Rodents	Amphibians	Reptiles	Fish
Peregrine Falcon	Fox	Skunk	Muskrat	Toads	Lizards	Utah Chub
Eagles	Coyote	Weasel	Beaver	Frogs	Horned Toads	Dace
Hawks	Bobcat	Cottontail Rabbits	Mink	Salamanders	Rattlesnakes	Various Suckers
Vultures	Mountain Lion	Jackrabbits			Blue Racer	Carp
Prairie Falcon	(rarely)	Ground Squirrels			Gopher Snake	



## Watershed

Average annual precipitation in the study area varies from 7 to 12 inches. Usually 40 to 50 percent of the precipitation occurs during the growing season.

The study area contains three soil associations and a miscellaneous land type designated rockland.

### Rockland

The rockland type has 50 to 75 percent bare rock with shallow to very shallow immature soils over bedrock. This type yields less than 0.2 acre feet of sediment per square mile, yet 80 to 90 percent of the precipitation runs off.

Vegetation is sparse to nonexistent. The productive potential is nil.

### Soil Association "A"

These are generally warm, dry, well-drained and moderately permeable soils containing gypsum. Sediment production is moderate. They are subject to moisture "run-in" from surrounding rockland, giving an impression of being in a higher precipitation zone.

The soils generally support blue grama and galleta grass on the flats in the central portion of the Swell and on the benches above North and South Salt Washes. These soils are fragile and productivity is severely damaged by accelerated erosion.

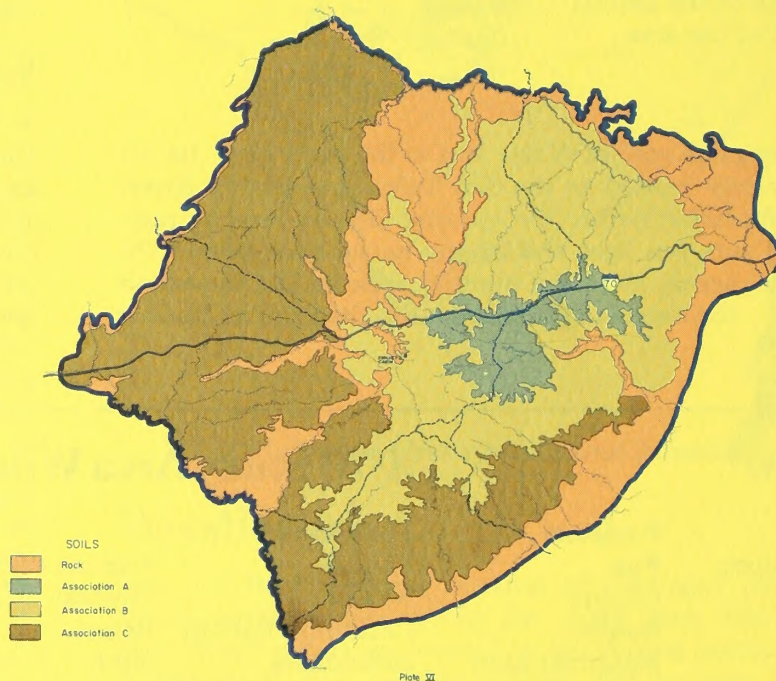
Much of gully erosion in the area resulted from old wagon roads or recent truck trails. The gullies act as an open drain, lowering the water table and leading to a decline in vegetative cover.

Productivity can be improved through management.

### Soil Association "B"

This association consists of rocky, warm, dry soils with gypsum and rocky, warm, dry sandy loams. They are well drained and moderately permeable. Sediment yield varies from 0.40 to 0.85 acre feet per square mile.

This association receives 8-10 inches of rainfall annually. The soils containing gypsum are dominantly shallow, but the sandy loams are relatively deep. The deeper soils are the most produc-



Soil Categories



tive. The native vegetation is mainly pinyon, juniper, brush, blue grama, and galleta grass. This soil association is found in Cactus Flats, Secret Mesa, Justensen Flats, Cliff Dweller Flat, Rattlesnake Bench and Oil Well Flat.

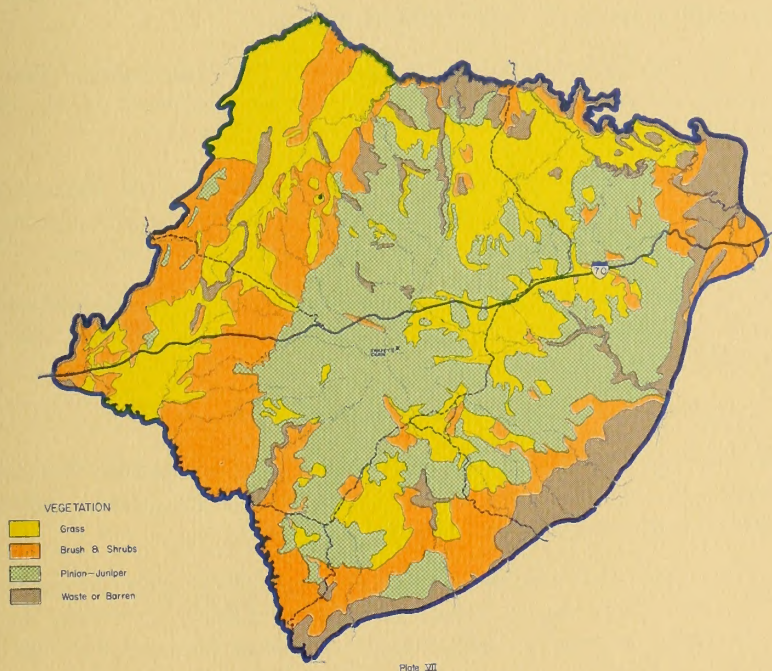
Production can be slightly improved through management, but mechanical revegetation would probably be unsuccessful.

### Soil Association "C"

This association consists of shallow loams, rocky soils with gypsum, and soils containing exchangeable sodium. These soils

are moderately to strongly saline and are highly erodible. The sediment yield varies from 0.50 acre feet per square mile on slopes less than 2 percent to 0.70 acre feet on 10 percent slopes. Runoff is rapid; the infiltration rate is less than 0.5 inch per hour.

The native vegetation is shadscale, greasewood, saltbush, galleta grass and Indian ricegrass. This association is found along Ferron Creek, North and South Salt Washes, Coal Wash, Sand Bench, Kimball Draw and Temple Mountain. Very little improvement in vegetative cover or reduction of erosion is possible in these generally hostile soils.



Vegetative Types



# Management Parameters

Action plans require fundamental management direction. The following basic management assumptions and goals provide the needed control of this plan.

## Basic Management Assumptions:

1. The Bureau has a responsibility to manage the lands within acceptable environmental limits for all their resource values and, particularly in this area, for the special values of open space, aesthetics, and recreation enjoyment. Concurrently, the management of these resources also is a necessity for their contribution to the economic stability and social well-being of the local communities, the State of Utah and the nation.
2. Any management proposal developed for the study area must recognize requirements of the millions of visitors who travel I-70 through San Rafael Swell but once, and confine their use to the visual corridor.
3. Foreseeably, the different resource needs and uses may be competitive or incompatible and the Bureau will be required after obtaining public participation to resolve the resulting conflicts.
4. Management must be flexible in order to adjust to new uses and demands emerging from changing life styles of the public, which are presently unforeseen.

## Specific Management Objectives Are:

1. Protect and maintain the natural scenery visible from I-70.
2. Protect and maintain significant aesthetic values of the general San Rafael area.
3. Protect the resources from indiscriminate recreation use by providing adequate facilities and patrol.
4. Protect and interpret the historical, archaeological, paleontological, geological, and other natural features of the San Rafael Swell.
5. Provide, where environmentally acceptable, for the accommodation of necessary land uses required for the orderly development of the immediate area and adjacent communities.
6. Provide for a variety of quality recreation uses, including solitude, where compatible with the natural attributes and resource potentials of the area.
7. Provide for visitor safety and protection.
8. Provide for orderly development of the renewable and non-renewable resources in an environmentally acceptable manner when demonstrated need arises.
9. Improve and restore the natural vegetative cover throughout the San Rafael area to enhance aesthetic quality, minimize wind and water erosion of fragile soils, continue to improve productivity of forage and native wildlife habitat and provide a sustained yield of all resource products to meet resource use demands.







# General Management Plan

The Bureau plans its management actions according to varying resource and use needs found in the study area. There are those actions that apply to management of the total area, and those additional actions that apply to the scenic corridor and to the primitive areas as depicted on the map.

Discussion of these actions are, therefore, categorized by those general actions that apply to the total area, followed by specific actions which apply to the visual corridor and service zone and the primitive zone.

## **Management Actions for the Total Area**

**NOMINATE THE SAN RAFAEL SWELL FOR DESIGNATION AS A NATIONAL CONSERVATION AREA. THIS WILL REQUIRE CONGRESSIONAL ACTION.**

The area has a high recreation potential and this is considered the dominant use in terms of numbers of users. Considering this use alone, the San Rafael Swell has the quality and use types typical of the nation's great park lands. However, the area is also potentially valuable for energy-related and other minerals.

The local economy is partially dependent on the grazing resource. The area has a potential for producing pinyon-juniper woodland-related products. Hunting of trophy desert mule deer in the San Rafael Swell is a quality experience desired by some sportsmen. The area's agate and petrified wood are actively sought by lapidaries and other collectors of gems and minerals. Because of these complex social and economic demands, the

area should be conserved and managed for multiple use rather than for any single use. The act designating this area as a National Conservation Area would provide the Bureau with the public commitment and legislative direction necessary to undertake the planned management of the multiple uses.

The study was confined to the area primarily related to I-70. Additional lands adjacent to the southwest and northeast sides encompass the same general characteristics as the study area. These areas will later be examined for suitability for inclusion in the National Conservation Area designation.

**CONSOLIDATE ALL LANDS WITHIN THE STUDY AREA UNDER ONE ADMINISTRATIVE JURISDICTION.**

Intermingled land ownership patterns tend to defeat orderly management because of differing management philosophies and purposes. To avoid potentially degrading pitfalls in protection and use, the Bureau will move to acquire all non-Federal lands within the study area. Acquisition will be made first within the visual corridor and service zone, followed by the primitive zone. Priorities are based on the probability of major degrading conflicts and conversely, the opportunities for orderly development.

**TO PROTECT AESTHETIC QUALITIES, CAREFULLY CONSIDER ALL CHANGES IN THE NATURAL SETTING ON THE BASIS OF NEED FOR THE ACTION.**

Of those actions which involve a change in aesthetics, only those actions considered absolutely necessary will be allowed and then only in a carefully controlled manner to minimize environmental impact.



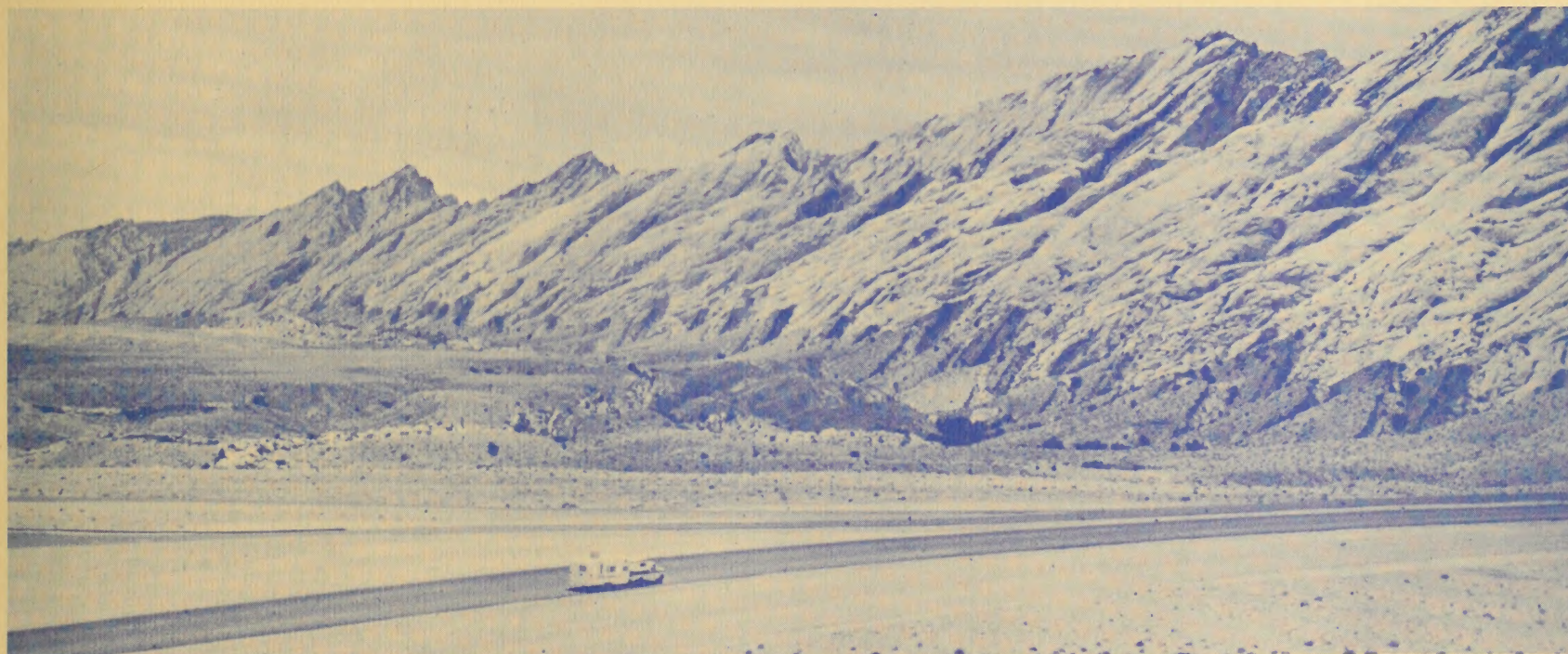
## Recreation and Archaeology Management

DESIGNATE THE VISUAL CORRIDOR, SWASEY CABIN AREA, THE SAN RAFAEL BRIDGE CAMPGROUND AND VICINITY, AND THE PRIMITIVE AREAS AS "RECREATION LANDS."

This is an area where recreation is expected to be the major use. Designation as "Recreation Lands" identifies unique recreation values and provides specific management direction for resource protection and enhancement of the local economy.

ESTABLISH A UNIFORMED BLM DESERT RANGER FORCE TO PROVIDE VISITOR PROTECTION, INFORMATION, MANAGEMENT AND TO GATHER VISITOR USE DATA.

A great number of people are using this desert area in a variety of ways. Many are unfamiliar with the area's attractions, the rules of conduct required to preserve these values or the pitfalls of desert travel. Because the large influx of recreationists has come only in the past couple of years, there is little factual information as yet about their use patterns and habits. A ranger-type patrol force would provide visitors with information and interpretative services, assist persons in trouble, enforce



*More than 2,500 automobiles a day are expected to travel I-70 across the San Rafael Swell by 1990.*



rules and regulations, provide initial attack in fire protection, and gather needed resource use data.

**DEVELOP AND IMPLEMENT A COMPREHENSIVE INTERPRETIVE PROGRAM FOR THE HISTORICAL, ARCHAEOLOGICAL, ECOLOGICAL, AND GEOLOGICAL FEATURES OF THE SAN RAFAEL SWELL.**

An interpretive program will assist the visitor to understand the various features of the area. This will enhance the quality of the recreation experience and make the visit more enjoyable. Devices for disseminating the information would include short-range radio broadcasts, pamphlets, brochures, an interpretive center, signs and maps.

**CONDUCT EXTENSIVE ARCHAEOLOGICAL, PALEONTOLOGICAL AND HISTORICAL SURVEYS OF THE SWELL AND PROTECT SITES FOUND VALUABLE FOR SCIENTIFIC AND PUBLIC PURPOSES.**

There has never been a formal archaeological survey of the San Rafael Swell because, until recently, these values were considered insignificant. A recent excavation in Salt Wash has changed that opinion. An inventory of archaeological sites and an assessment of their relative values is needed in order to determine the impact of other resource uses and demands on these values. Major paleontological finds have been made near the study area and because the same geologic formations are located in the Swell, the potential for further discovery is high. Swasey's Cabin has been designated a historical site by the Utah State Historical Society. This structure requires stabilization and other preparation for public enjoyment. Other sites of historical significance may also exist.

**RESTRICT CAMPING IN ANY ONE PLACE IN THE STUDY AREA TO 16 DAYS.**

Action is required to provide more people with camping opportunities within the area. A number of people are now parking

their trailers in the Swell for several months at a time and using them only during weekends. This severely limits the number of campsites available for use by the many who follow.

**PROVIDE FOR ORDERLY RECREATION USE THROUGHOUT THE AREA.**

Many users will be self-sufficient in exploring the recreational values of the area. However, a unique opportunity also exists to provide for commercial tour guides, dude ranch facilities and related services whereby the inexperienced and others so desiring can obtain assistance in taking in a desert experience. Such operations should be closely controlled as to location, extent of development and type of accommodations provided.

## **Access**

**UPGRADE OR CONSTRUCT DESIGNATED ROADS TO BETTER SUPPORT TRAFFIC AND REDUCE EROSION CAUSED BY POOR ALIGNMENT AND CONSTRUCTION FEATURES.**

Roads in gypsum soils will be surfaced with gravel only to keep maintenance cost at a minimum. Gypsum soils undulate with weather changes and will not support a hard surface road.

**CONFINE ALL VEHICULAR TRAFFIC TO DESIGNATED ROADS AND TRAILS TO PREVENT EROSION AND SCARRING DUE TO OVERLAND VEHICULAR TRAFFIC.**

Abandoned roads and trails will be obliterated and revegetated. The fragile soils are highly erosive. Many of the most prominent examples of accelerated soil erosion started in ruts left by vehicles. Gullies left by accelerated erosion tend to drain adjacent soils, leaving them less able to sustain a protective vegetative cover.





Road Network



## **Minerals Management**

**RESTRICT OIL AND GAS LEASES BY STIPULATIONS DESIGNED TO DEVELOP THE RESOURCE IN AN ENVIRONMENTALLY ACCEPTABLE MANNER.**

There is potential for development of this resource in the study area. Its development should be encouraged to meet the energy needs of the nation and provide economic benefits to Emery County. This development should, however, be constrained to meet the environmental requirements of the area.

The need for pipeline and access road rights-of-way will be carefully evaluated. If needed, they will be located as unobtrusively as possible, and will enter the scenic corridor only along the rights-of-way for established roads.

Exploratory seismic activity is also potentially an environmentally disruptive activity that will be closely controlled in aesthetic areas.

**PROHIBIT DISPOSAL OF SAND, GRAVEL AND BUILDING STONE, EXCEPT AS NEEDED FOR I-70 CONSTRUCTION.**

Materials needed for I-70 construction will be mined outside the visual corridor. Generally, these materials are in low demand and are found in abundance outside the study area. Development of gravel pits and quarries is not consonant with maintaining the aesthetic quality of the area.

## **Livestock Management**

**MANAGE LIVESTOCK GRAZING TO PROTECT AND IMPROVE THE NATURAL VEGETATIVE COVER BY EVALUATING ALL GRAZING USE TO DETERMINE WHETHER EXISTING GRAZING SYSTEMS, CARRYING CAPACITIES,**

**AND SEASONS OF USE SHOULD BE MODIFIED; IMPLEMENT A SCIENTIFIC GRAZING SYSTEM ON ALL ALLOTMENTS IN THE STUDY AREA; AND EVENTUALLY ELIMINATE ALL ADMINISTRATIVE LIVESTOCK TRAILS.**

The vegetative resource is the primary protector of the soils from wind and water erosion. Through livestock use, it also provides a contribution to the agricultural economy of Emery County. The range condition is fair or poor and production is impaired over most of the study area. If grazing use is not modified and a scientific system implemented on each allotment within the next five years, additional significant losses will occur to the grazing and watershed resources.

**CONSIDER AND PROVIDE FOR WILDLIFE AS WELL AS LIVESTOCK NEEDS IN ANY FUTURE WATER DEVELOPMENTS, FENCES, OR ALLOTMENT MANAGEMENT SYSTEMS.**

Range improvements and scientific management systems must consider all of the needs of the area if they are to provide maximum economic return.

## **Wild Horses and Burros**

**DETERMINE WILD HORSE AND BURRO HABITAT NEEDS AND POSSIBLE CONFLICTS WITH DOMESTIC LIVESTOCK. CONSIDER THE POSSIBILITY OF REDUCING OR ELIMINATING LIVESTOCK USE TO AVOID COMPETITION FOR FORAGE, OR DESIGNATING A WILD HORSE AND BURRO AREA.**

Although approximate numbers of animals are known, we need data on territory, reproduction and herd maintenance capabilities, and direct livestock conflict to make sound management decisions.



## Woodland Management

### INVENTORY WOODLAND RESOURCES TO DETERMINE STAND CONDITION, VOLUMES, REPRODUCTION POTENTIAL AND PLANT AND ANIMAL DEPENDENCE.

At the present time there is no concrete information available concerning volumes, growth rates and reproductive capabilities of the woodland stands in this area. A concurrent inventory of woodland wildlife species is needed. All of this information is necessary for proper management of a sustained production of woodland products.

### RESTRICT THE SALE OF WOODLAND PRODUCTS TO DEAD AND DOWNED MATERIAL UNTIL AN INVENTORY DETERMINING PRODUCTION POTENTIAL IS COMPLETE.

To protect aesthetic values, such sales will be made only under close supervision. Protection of this resource requires a conservative use until ultimate potential is defined.

## Wildlife Management

### INVENTORY WILDLIFE SPECIES AND HABITATS.

Only general data is available on the ecological niche of the non-game wildlife in the area. For example, the pinyon jay is found in pinyon-juniper stands, but its ecological relationship to this woodland is unknown. Identification of critical species and habitat needs is required for proper decisions concerning woodland and livestock forage management.

### INVENTORY THE AQUATIC WILDLIFE IN THE SAN RAFAEL AND MUDDY RIVERS.

Little is known of the aquatic wildlife in these streams. The presence of rare species is possible in the highly mineralized waters. Proper river management requires this basic information.

### LIMIT WILDLIFE INTRODUCTIONS TO NATIVE SPECIES AND ALLOW SUCH INTRODUCTIONS ONLY WHEN SUITABLE HABITAT IS AVAILABLE.

The primitive nature of much of this area will be better preserved by staying with the native wildlife species that once inhabited this or nearby areas. No species will be introduced until sufficient forage to sustain them is definitely found or made available.

## Watershed Protection

### PROHIBIT MECHANICAL WATERSHED IMPROVEMENT OR VEGETATIVE MANIPULATION PROJECTS WITHIN THE SAN RAFAEL SWELL.

Poor soils and low rainfall indicate a low chance for success of this type of activity. The associated land scarring is incompatible with the objective of maintaining the natural character of the area.

## Fire Protection

Fire control is not expected to be a major management problem due to the sparse vegetation over most of the area. The proposed ranger patrol will provide initial attack on any fire with backup from the BLM Price District's regular fire control force.



## Visual Corridor and Service Zone

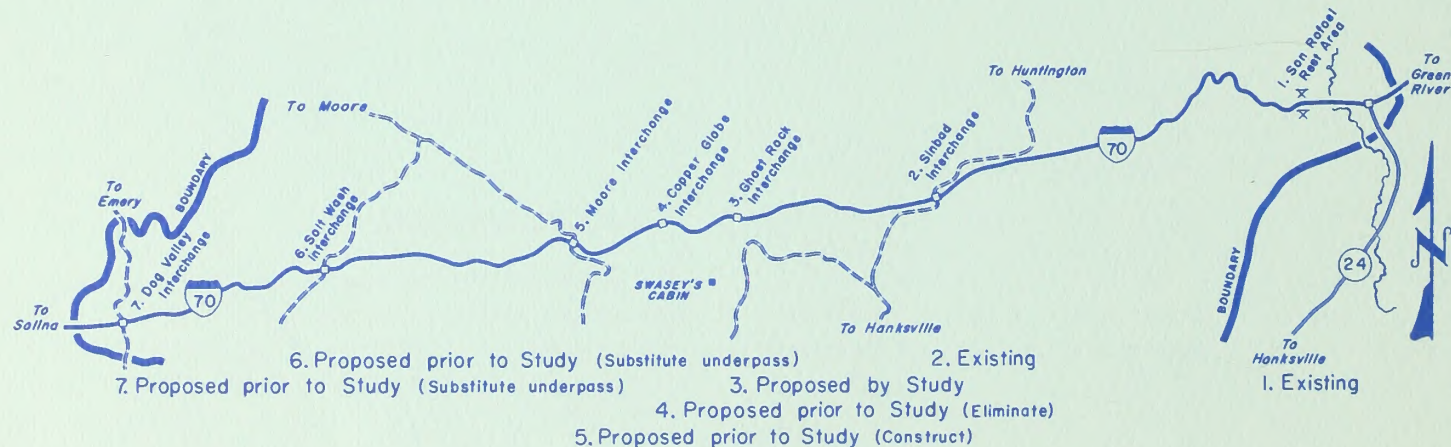
WITHDRAW THE NATIONAL RESOURCE LANDS WITHIN THE VISUAL CORRIDOR AND SERVICE ZONE FROM ALL FORMS OF ENTRY. PROHIBIT CONSTRUCTION OF BUILDINGS OR STRUCTURES OUTSIDE OF ROAD RIGHTS-OF-WAY WITHIN THE VISUAL CORRIDOR.

These actions will minimize man's disturbance of the natural character of the landscape. Approximately 100,000 acres would be affected by this action. Potential mineral development affected by this action include oil and gas, a portion of the silica sand deposit, gypsum, manganese, barite and some sand and gravel. Though all of these minerals have been found here, they are not being produced. The potential for development is low because of remoteness from market in addition to low quantities or low quality of the ores. The foreseeable economic factors

indicate that, with the exception of oil and gas, these minerals may never be economically suitable for development. There are insufficient data to predict the potential for oil and gas development.

## Access Management From I-70

Interstate Highway 70, running east and west, bisects the area and constitutes its primary access route. It is also the major physical intrusion on the natural landscape. Two lanes were open to traffic in November, 1970. Construction of the final two lanes is scheduled for completion in 1977. Average daily traffic was 1,030 vehicles in 1972 and is conservatively estimated to be 2,500 vehicles by 1990.



## I-70 and Interchanges



Highway alignment and controlled access from it through interchanges are keys to protecting the natural environment and providing for orderly resource development and use. To date one interchange has been built (at Sagebrush Bench) within the study area and another four are proposed. The Bureau proposes that only two more interchanges be provided for access off I-70 through the area. These and other needed actions are explained in the following nine items which will be requested of the Utah Department of Highways:

**CONDUCT AN ARCHAEOLOGICAL SURVEY OF THE I-70 RIGHT-OF-WAY TO BE COMPLETED PRIOR TO CONSTRUCTION OF THE SECOND LANE.**

There was no survey conducted prior to construction of I-70 because there were no indications that the area contained any significant archaeological values. This has changed because of recent discoveries in the area. A survey would locate and allow salvage of any archaeological values which may be present. Construction is scheduled between Fremont Junction and Devil's Canyon in 1976 with final construction between Devil's Canyon and Rattlesnake Bench in 1977.

**CONFINE THE FUTURE WESTBOUND LANE IN THE HEAD OF SINBAD AREA TO WITHIN FIFTY FEET OF THE EXISTING LANE, RATHER THAN ALLOW THE PRESENTLY PLANNED WIDTH OF ONE-HALF MILE BETWEEN LANES.**

The apparent reason for the planned alignment is to reduce the road grade. The grade on the existing lane is not excessive. Construction on the planned alignment will create a major adverse impact on aesthetic values of the Head of Sinbad Flat and create an uncontrollable vandalism problem for Dutchman's Arch and nearby Indian pictographs. The planned alignment brings these natural features within close walking distance of the highway. There would be no way to stop people from parking on the right-of-way and destroying these features through thoughtlessness.

**PROVIDE ACCESS TO BLACK DRAGON CANYON FROM THE SAN RAFAEL REST AREA.**

Black Dragon Canyon is awesomely scenic and contains significant pictographs. At the present time access is from Buckmaster Interchange, south on U-24 to Hatt Ranch, then back up a trail along the reef, through a concrete box under I-70 and up to the canyon, a distance of nearly 20 miles. The proposed access would shorten this distance to two miles. At the present time people are repeatedly cutting the right-of-way fence rather than travel the excess distance.

**CONSTRUCT GHOST ROCK INTERCHANGE — NE¼ SEC. 33, T. 23 S., R. 10 E.**

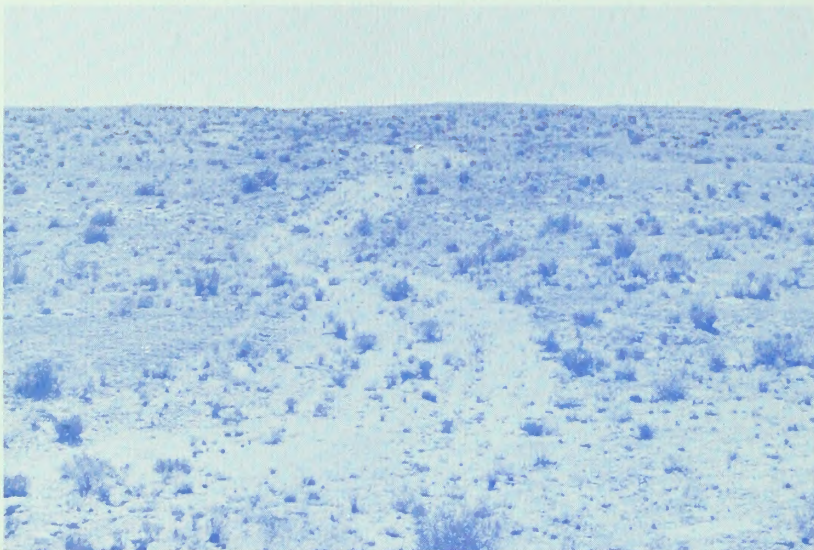
Construction of this interchange would be one way to accommodate a potential recreation complex, including Swasey's Cabin Historical Site, a campground, pictographs, Dutchman's Arch, hiking trails, and an interpretative center. This complex would provide destination-oriented recreationists with a central base of operations and would satisfy the demand for transient overnight facilities. Possible alternatives include a frontage road from Sinbad Interchange and a turnoff and parking area along the highway with hiking access to natural and historical features. Final decision awaits public review.

**ELIMINATE THE PROPOSED COPPER GLOBE (SECRET MESA) INTERCHANGE — SW¼ SEC. 30, T. 22 S., R. 10 E.**

This proposed interchange cannot serve the Copper Globe area to the south because the terrain is too rough for road or trail construction. It does serve a jeep trail to Ferron, but this trail can also be reached from the Moore Interchange. The construction cost of this interchange is not warranted because of a lack of resource use of the natural resource lands which would be served.

A highway maintenance facility under temporary special land use permit (expiring 1976) lies in Secret Mesa just north of this





*Unneeded trails will be closed and obliterated through revegetation to restore the natural landscape.*

proposed interchange. There are other sites available for this facility which are served by other needed interchanges. The cost of construction of Copper Globe interchange to serve the maintenance facility is not warranted.

**CONSTRUCT MOORE (EAGLE CANYON) INTERCHANGE — W½ SEC. 33, T. 22 S., R. 9 E.**

This interchange connects with a county road to Moore, Utah. This road serves Justensen Flat, Head of Devil's Canyon and the Copper Globe area to the south. Present and expected use of these areas and the need to connect with this county road justifies this interchange.

**SUBSTITUTE VEHICLE UNDERPASSES FOR THE PROPOSED INTERCHANGES AT DOG VALLEY — S½ SEC. 14 T.**



*The Moore interchange will be built on the edge of Eagle Canyon, location of an overlook.*

**23 S., R. 6 E., AND SALT WASH — E½ SEC. 6, T. 23 S., R. 8 E.**

The areas to be served by these interchanges are readily accessible from other interchanges and roads. The original purpose for these two interchanges was to provide access for users of the national resource lands. This purpose can be served by underpasses of a size to allow vehicular passage. Economic savings and lessened impact on aesthetic values would result.

**REQUEST THE UTAH HIGHWAY DEPARTMENT TO IMMEDIATELY PROVIDE SANITATION FACILITIES AT THE REST AREAS ON THE RIGHT-OF-WAY.**

More than 500,000 people stopped at these I-70 rest areas and overlooks in 1972. No sanitation facilities are in operation. Trees are used as latrine screens. A definite health hazard and aesthetic problem exists.



**ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE UTAH DEPARTMENT OF HIGHWAYS TO ENSURE THAT THE TWO AGENCIES UNDERTAKE COMPATIBLE INTERPRETIVE EFFORTS ALONG I-70 IN THE SAN RAFAEL SWELL.**

The cooperative efforts should result in better public service at least cost. Highway signs are a part of this program. They should be managed to minimize impact on scenery but adequately identify important areas reached from the various interchanges.

## **Rights-of-Way**

**CONFINE FUTURE POWERLINE, TELEPHONE AND PIPELINE RIGHTS-OF-WAY TO THE I-70 RIGHT-OF-WAY AND EXISTING AND FUTURE ROAD RIGHTS-OF-WAY WITHIN THE AREA AND STIPULATE THAT THEY BE BURIED.**

This ensures the objective of maintaining the natural scenery from I-70.

## **Recreation**

**PROVIDE PUBLICLY OWNED CAMPING FACILITIES SOUTH OF I-70 IN THE VICINITY OF SWASEY'S CABIN.**

There is a demonstrated need for overnight camping facilities at the present time. There is a potential need for facilities to handle destination-oriented recreation use. The Swasey Cabin area is ideally suited to serve as the focal point, or center for recreation use and development in the San Rafael Swell.

## **Commercial Travel Services**

**HOLD ANY DECISION REGARDING THE NEED FOR DEVELOPMENT OF COMMERCIAL FACILITIES AT MOORE INTERCHANGE IN ABEYANCE UNTIL THE INTERCHANGE IS CONSTRUCTED. ENCOURAGE IMMEDIATE DEVELOPMENT OF COMMERCIAL TRAVELER SERVICE**

**FACILITIES UNDER A SPECIAL USE PERMIT IN SEC. 13, 14, T. 22 S., R. 11 E. NEAR SINBAD INTERCHANGE.**

The current construction schedule calls for the completion of the Moore Interchange in 1977. It is unlikely that anyone would be interested in development of the site until construction is complete. Traveler service facilities are needed as soon as possible. Because the Sinbad Interchange is operational, facilities consisting of a service station, restaurant, store and privately developed campground could be installed much sooner.

Given facilities at the Sinbad Interchange and probable development of private land at the Fremont Junction Interchange just west of the study area, the long term economic and environmental desirability of the Moore Interchange is in doubt.

## **Livestock Management**

**CONTINUE LIVESTOCK GRAZING WITHIN THE VISUAL CORRIDOR.**

Under proper management, this practice appears compatible with the natural setting. If it is found to be damaging in the future, the use can be modified accordingly.

## **Woodland Management**

**PERMIT ONLY THE HARVEST OF PINE NUTS FOR PERSONAL USE IN THE I-70 VISUAL CORRIDOR AND RECREATION DEVELOPMENT SITES.**

The woodlands will be managed for their aesthetic value. The woodland stands affected by this recommendation constitute less than 10 percent of the woodlands within the San Rafael Swell and only a fraction of 1 percent of the total woodlands in the district. The intangible aesthetic values, which may be lost if commercial harvest is allowed, offset any commercial value. The limited demand for woodland products in this area could easily be satisfied elsewhere.



# Primitive Zone

Bureau of Land Management  
Library  
Denver Service Center

DESIGNATE AND MANAGE THE COAL WASH AND MEXICAN MOUNTAIN AREAS IN THE CAT CANYON-HEBE CANYON AREA AND KEESLE COUNTRY AREA AS PRIMITIVE AREAS.

These areas are truly primitive in character. There are few if any desert environment areas designated and managed for primitive values. The close proximity to I-70 places these areas within easy reach of many persons. This will allow them to experience a wilderness environment without having to resort to a major expedition to reach the area, which is the case with most primitive areas.

INITIATE STUDIES TO DETERMINE SUITABILITY OF THE SAN RAFAEL RIVER AND MUDDY CREEK FOR INCLUSION IN THE WILD AND SCENIC RIVERS SYSTEM.

These rivers appear to meet the criteria for inclusion in the system. A study is needed to fully evaluate their merits. If they are qualified they would be subsequently nominated for inclusion in the system.



*Erosion over the centuries has cut an interesting pattern in the Keesle Country proposed primitive area.*



Bureau of Land Management  
Library  
Bldg. 50, Denver Federal Center  
Denver, CO 80225

A comprehensive use plan has been developed by the Bureau of Land Management for the land area within the San Rafael Swell affected by Interstate Highway 70 travelers. Natural Resource Specialists from the Bureau's Denver Service Center, Utah State Office and Price District Office participated. All available resource data were assembled and analyzed. Public meetings and information concerning the uses made and needed in the management and use recommendations which resulted from this effort are in the Price District Office of the Bureau of Land Management, 7th East, Price, Utah.

U.S. DEPARTMENT BUREAU OF LAND MANAGEMENT	
BORROWER	
HD 245 .U8 L362	Multiple use manager Resource Lands San
DATE LOANED	BORROWER
(Continued on reverse) Form	

**BACK COVER PHOTO**  
*Sandstone cliffs border a pleasant park  
at Horseshoe Bend, one of the  
picturesque open areas on the San Rafael Swell.*



